

## 配列表

## SEQUENCE LISTING

&lt;110&gt; ASANO Shinichiro et al.

&lt;120&gt; Protein Having Insecticidal Activity, DNA Coding Said Protein, Pest Control Agent and Pest Control Method

&lt;130&gt; B0F-3887PCT

&lt;150&gt; JP 2000-236140

&lt;151&gt; 2000-08-03

&lt;160&gt; 3

&lt;210&gt; 1

&lt;211&gt; 1167

&lt;212&gt; PRT

<213> *Bacillus thuringiensis*

&lt;400&gt; 1

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Gln Thr Thr Thr Leu Gln Asn Met Asn Tyr Lys Asp Tyr Leu Arg Met

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45

Ser Glu Gly Glu Asn Pro Glu Leu Phe Gly Asn Pro Glu Thr Phe Ile

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Ser Ser Ser Thr Val Gln Thr Gly Ile Gly Ile Val Gly Gln Val Leu

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Gly Ala Leu Gly Val Pro Phe Ala Gly Gln Ile Ala Ser Phe Tyr Ser

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Asp Thr Arg Ala Arg Ser Val Val Val Thr Gln Tyr Ile Ala Leu Glu  
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Val Pro Leu Leu Ser Val Tyr Ala Gln Ala Ala Asn Leu His Leu Leu  
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Gly Glu Ile Ser Thr Phe Tyr Asp Arg Gln Val Thr Arg Thr Ala Gln  
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	370	375	380
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Ala Ser Phe Thr Leu Leu Asp Lys Asn Thr Gly Ser Gly Ser Val Gly			
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Gly Phe Thr Tyr Ser Lys Pro His Thr Thr Met Gln Val Cys Thr Gln			
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Asn Tyr Asn Thr Ile Asp Glu Ile Pro Pro Glu Asn Glu Pro Leu Ser			
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Arg Gly Tyr Ser His Arg Leu Ser His Ile Thr Ser Tyr Ser Phe Ser			
	485	490	495

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Trp Thr His Arg Ser Ala Asp Val Thr Asn Thr Val Tyr Ser Asp Lys  
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Ile Thr Gln Ile Pro Val Val Lys Ala His Thr Leu Val Ser Gly Thr  
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Lys Asn Val Pro Asp Asn Leu Leu Pro Asp Val Leu Pro Val Asn Ser  
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Cys Gly Gly Ile Asp Arg Cys Ser Glu Gln Gln Tyr Val Asp Ala Asn  
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Asn Thr Gly Ile Trp Val Val Phe Lys Ile Pro Thr Thr Asn Gly Tyr

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930	935	940
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Asn Leu Tyr Asp Leu Arg Asn Ala Ile Pro Asn Gly Asp Phe Arg Asn		
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Gly Leu Ser Asp Trp Asn Ala Thr Ser Asp Val Asn Val Gln Gln Leu		
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Ser Asp Thr Ser Val Leu Val Ile Pro Asn Trp Asn Ser Gln Val Ser		
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Gln Gln Phe Thr Val Gln Pro Asn Tyr Arg Tyr Val Leu Arg Val Thr		
1075	1080	1085
Ala Arg Lys Glu Gly Val Gly Asp Gly Tyr Val Ile Ile Arg Asp Gly		
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1105 1110 1115 1120

Gly Val Leu Ser Ala Asp Gln Thr Ser Tyr Ile Thr Lys Thr Val Glu  
1125 1130 1135

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<212> DNA

<213> *Bacillus thuringiensis*

<220>

<221> CDS

<222> (1).. (3501)

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tct act tct gta tcc gat aat tct gtt aga tac cct tta gca aac gat 96  
Ser Thr Ser Val Ser Asp Asn Ser Val Arg Tyr Pro Leu Ala Asn Asp

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caa acg acc aca tta caa aac atg aac tat aaa gat tat ctg aga atg 144  
Gln Thr Thr Thr Leu Gln Asn Met Asn Tyr Lys Asp Tyr Leu Arg Met

35 40 45

tct gag gga gag aat cct gaa tta ttt gga aat ccg gag acg ttt att 192

Ser	Glu	Gly	Glu	Asn	Pro	Glu	Phe	Gly	Asn	Pro	Glu	Thr	Phe	Ile		
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agt	tca	ict	acg	gtt	caa	act	gga	att	ggc	att	gtt	ggc	caa	gta	ctg	240
Ser	Ser	Ser	Thr	Val	Gln	Thr	Gly	Ile	Gly	Ile	Val	Gly	Gln	Val	Leu	
65					70				75					80		
ggg	gct	tta	ggg	gtt	cca	ttt	gcl	gga	cag	ata	gct	agt	ttt	tat	agt	288
Gly	Ala	Leu	Gly	Val	Pro	Phe	Ala	Gly	Gln	Ile	Ala	Ser	Phe	Tyr	Ser	
				85				90					95			
ttc	att	gtc	ggc	caa	tta	tgg	cca	tca	agt	acc	gtg	agt	gta	tgg	gaa	336
Phe	Ile	Val	Gly	Gln	Leu	Trp	Pro	Ser	Ser	Thr	Val	Ser	Val	Trp	Glu	
				100				105					110			
aig	att	alg	aaa	caa	gig	gaa	gat	cta	att	gat	caa	aaa	ata	aca	gat	384
Met	Ile	Met	Lys	Gln	Val	Glu	Asp	Leu	Ile	Asp	Gln	Lys	Ile	Thr	Asp	
			115				120					125				
ict	gta	agg	aaa	aca	gcg	ctt	gca	gga	cta	caa	gga	tta	gga	gat	ggc	432
Ser	Val	Arg	Lys	Thr	Ala	Leu	Ala	Gly	Leu	Gln	Gly	Leu	Gly	Asp	Gly	
			130				135				140					
tta	gac	gta	tat	cag	aaa	tca	ctt	aag	aat	tgg	ctg	gaa	aat	cgt	aat	480
Leu	Asp	Val	Tyr	Gln	Lys	Ser	Leu	Lys	Asn	Trp	Leu	Glu	Asn	Arg	Asn	
145				150				155						160		
gat	aca	aga	gcl	aga	agt	gtt	gtg	glg	acc	caa	tat	ata	gcl	tta	gag	528
Asp	Thr	Arg	Ala	Arg	Ser	Val	Val	Val	Thr	Gln	Tyr	Ile	Ala	Leu	Glu	
			165					170					175			
ctt	gat	ttt	gtt	gcl	aaa	atc	cca	ctt	ttt	gca	ata	ctt	gga	cag	gaa	576
Leu	Asp	Phe	Val	Ala	Lys	Ile	Pro	Ser	Phe	Ala	Ile	Ser	Gly	Gln	Glu	
			180					185					190			
gta	cca	tta	tta	tca	glg	tal	gca	caa	gca	gcg	aat	tta	cat	tig	cta	624
Val	Pro	Leu	Leu	Ser	Val	Tyr	Ala	Gln	Ala	Ala	Asn	Leu	His	Leu	Leu	
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210 215 220	
gga gaa att tcc aca ttt tat gat cgt cag gtg aca cgt acc gcc caa	720
Gly Glu Ile Ser Thr Phe Tyr Asp Arg Gln Val Thr Arg Thr Ala Gln	
225 230 235 240	
tac tcg gat tat tgt gta aag tgg tat aac act ggc tta gat aaa tta	768
Tyr Ser Asp Tyr Cys Val Lys Trp Tyr Asn Thr Gly Leu Asp Lys Leu	
245 250 255	
aaa ggt acg aat gct gca agt tgg ctg aag tat cac caa ttc cga aga	816
Lys Gly Thr Asn Ala Ala Ser Trp Leu Lys Tyr His Gln Phe Arg Arg	
260 265 270	
gaa atg aca tta ctg gta tta gat tta gta gcg tta ttt cca aac tat	864
Glu Met Thr Leu Leu Val Leu Asp Leu Val Ala Leu Phe Pro Asn Tyr	
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gac aca cgt acg tat cca atc gaa aca acg gcc caa ctt aca cgg gaa	912
Asp Thr Arg Thr Tyr Pro Ile Glu Thr Thr Ala Gln Leu Thr Arg Glu	
290 295 300	
gtg tat aca gat cca ata gta ttt aac aga gaa aca agt ggt gga ttt	960
Val Tyr Thr Asp Pro Ile Val Phe Asn Arg Glu Thr Ser Gly Gly Phe	
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Cys Arg Arg Trp Ser Leu Asn Ser Asp Ile Ser Phe Ser Glu Val Glu	
325 330 335	
agc gct gta att cgt tca cca cac cta ttt gat ata ctc agt gaa ata	1056
Ser Ala Val Ile Arg Ser Pro His Leu Phe Asp Ile Leu Ser Glu Ile	
340 345 350	
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Glu Phe Tyr Thr Thr Arg Ala Gly Leu Pro Leu Asn Asn Thr Glu Tyr	
355	360 365
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Leu Glu Tyr Trp Val Gly His Ser Ile Lys Tyr Lys Asn Thr Asn Ala	
370	375 380
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Ser Ser Ala Leu Glu Arg Asn Tyr Gly Thr Ile Thr Ser Asn Lys Ile	
385	390 395 400
aag tat tat gat tta gca aat aag gat atc ttt cag gtt cga tca tta	1248
Lys Tyr Tyr Asp Leu Ala Asn Lys Asp Ile Phe Gln Val Arg Ser Leu	
405	410 415
ggg gcg gat tta gct aat tac tac gca cag gta tat gga gtt ccg tac	1296
Gly Ala Asp Leu Ala Asn Tyr Tyr Ala Gln Val Tyr Gly Val Pro Tyr	
420	425 430
gct agt ttt aca ctc ctt gac aag aat aca gga tca gga tca gtt gga	1344
Ala Ser Phe Thr Leu Leu Asp Lys Asn Thr Gly Ser Gly Ser Val Gly	
435	440 445
ggt ttt acg tac tca aaa cca cat aca act atg caa gta tgt aca caa	1392
Gly Phe Thr Tyr Ser Lys Pro His Thr Thr Met Gln Val Cys Thr Gln	
450	455 460
aat tac aat acg att gat gaa atc cct cca gag aat gag cca ctt agt	1440
Asn Tyr Asn Thr Ile Asp Glu Ile Pro Pro Glu Asn Glu Pro Leu Ser	
465	470 475 480
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Arg Gly Tyr Ser His Arg Leu Ser His Ile Thr Ser Tyr Ser Phe Ser	
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lgg aca cat cgg agt gcg gat gtt aca aal aca gtt tat tca gat aaa 1584  
 Trp Thr His Arg Ser Ala Asp Val Thr Asn Thr Val Tyr Ser Asp Lys  
 515 520 525

att act cag ata cca gtt gta aag gca cat act tta gtt tca ggt act 1632  
 Ile Thr Gln Ile Pro Val Val Lys Ala His Thr Leu Val Ser Gly Thr  
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act gtt att aaa ggt cct gga ttt aca gga ggc aat atc ctt aaa aga 1680  
 Thr Val Ile Lys Gly Pro Gly Phe Thr Gly Gly Asn Ile Leu Lys Arg  
 545 550 555 560

aca agt agt ggt ccg tta gct tat act agt gtc tct gta aaa tca cca 1728  
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 1140 1145 1150

ggt gta ttc aac ata gaa agt gla gaa ctc gtg tta gaa gaa gag taa 3504  
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<210> 3

<211> 3690

<212> DNA

<213> *Bacillus thuringiensis*

<400> 3

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 gtacttgggg ctttaggggt tccatttgc tggacagatag ctattitita tagtttcat 480  
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## SEQUENCE LISTING

&lt;110&gt; ASANO, Shinichiro

&lt;120&gt; PROTEIN HAVING INSECTICIDAL ACTIVITY, DNA ENCODING THE PROTEIN, AND NOXIOUS ORGANISM-CONTROLLING AGENT AND METHOD

&lt;130&gt; Q68821

&lt;140&gt; 10/089,678

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&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

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Ser Ser Ser Thr Val Gln Thr Gly Ile Gly Ile Val Gly Gln Val Leu  
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Gly Ala Leu Gly Val Pro Phe Ala Gly Gln Ile Ala Ser Phe Tyr Ser  
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Glu Met Thr Leu Leu Val Leu Asp Leu Val Ala Leu Phe Pro Asn Tyr  
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Cys Arg Arg Trp Ser Leu Asn Ser Asp Ile Ser Phe Ser Glu Val Glu

325

330

335

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Ser Ser Ala Leu Glu Arg Asn Tyr Gly Thr Ile Thr Ser Asn Lys Ile  
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Lys Tyr Tyr Asp Leu Ala Asn Lys Asp Ile Phe Gln Val Arg Ser Leu  
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Gly Ala Asp Leu Ala Asn Tyr Tyr Ala Gln Val Tyr Gly Val Pro Tyr  
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Gly Phe Thr Tyr Ser Lys Pro His Thr Thr Met Gln Val Cys Thr Gln  
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Arg Gly Tyr Ser His Arg Leu Ser His Ile Thr Ser Tyr Ser Phe Ser  
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Trp Thr His Arg Ser Ala Asp Val Thr Asn Thr Val Tyr Ser Asp Lys  
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Ile Thr Gln Ile Pro Val Val Lys Ala His Thr Leu Val Ser Gly Thr  
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Lys Lys Asp Ala Leu Gln Thr Ser Val Thr Asp Tyr Gln Val Asn Gln  
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 820 825  
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 His Ala Phe Ser Phe His Ile Asp Thr Gly Glu Ile Asp Leu Asn Glu  
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 Gln Ala Ile Asp Arg Leu Phe Ala Asp Tyr Gln Asp Gln Lys Leu Asn  
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 Ser Gly Val Glu Met Ser Asp Met Leu Ala Ala Gln Asn Leu Val Gln  
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Ser Ile Pro Tyr Val Tyr Asn Asp Ala Leu Pro Glu Ile Pro Gly Met  
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Trp Asn Leu Tyr Asp Leu Arg Asn Ala Ile Pro Asn Gly Asp Phe  
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Arg Asn Gly Leu Ser Asp Trp Asn Ala Thr Ser Asp Val Asn Val  
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Ser Tyr Ile Thr Lys Thr Val Glu Phe Thr Pro Ser Thr Glu Gln  
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 Ser Thr Ser Val Ser Asp Asn Ser Val Arg Tyr Pro Leu Ala Asn Asp  
 20 25 30  
 caa acg acc aca tta caa aac atg aac tat aaa gat tat ctg aga atg 144  
 Gln Thr Thr Thr Leu Gln Asn Met Asn Tyr Lys Asp Tyr Leu Arg Met  
 35 40 45  
 tct gag gga gag aat cct gaa tta ttt gga aat ccg gag acg ttt att 192  
 Ser Glu Gly Glu Asn Pro Glu Leu Phe Gly Asn Pro Glu Thr Phe Ile  
 50 55 60  
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 Ser Ser Ser Thr Val Gln Thr Gly Ile Gly Ile Val Gly Gln Val Leu  
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 Gly Ala Leu Gly Val Pro Phe Ala Gly Gln Ile Ala Ser Phe Tyr Ser  
 85 90 95  
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 Phe Ile Val Gly Gln Leu Trp Pro Ser Ser Thr Val Ser Val Trp Glu  
 100 105 110  
 atg att atg aaa caa gtg gaa gat cta att gat caa aaa ata aca gat 384  
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 115 120 125  
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 Ser Val Arg Lys Thr Ala Leu Ala Gly Leu Gln Gly Leu Gly Asp Gly  
 130 135 140  
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 Leu Asp Val Tyr Gln Lys Ser Leu Lys Asn Trp Leu Glu Asn Arg Asn  
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Val Asp Lys Phe Glu Leu Ile Pro Val Asn Ala Thr Phe Glu Ala Glu	660	665	670	
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Lys Lys Asp Ala Leu Gln Thr Ser Val Thr Asp Tyr Gln Val Asn Gln	690	695	700	
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Lys Arg Met Leu Trp Asp Ala Val Lys Glu Ala Lys Arg Leu Val Gln	725	730	735	
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Gln Asp Leu Glu Ile Lys Leu Ile Arg His Arg Ala Asn Gln Ile Val	820	825	830	
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Lys Asn Val Pro Asp Asn Leu Leu Pro Asp Val Leu Pro Val Asn Ser	835	840	845	
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His Ala Phe Ser Phe His Ile Asp Thr Gly Glu Ile Asp Leu Asn Glu		
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Asn Thr Gly Ile Trp Val Val Phe Lys Ile Pro Thr Thr Asn Gly Tyr		
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Ala Thr Leu Gly Asn Leu Glu Val Glu Glu Gly Pro Leu Ser Gly		
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Glu Thr Leu Glu Arg Ala Gln Gln Glu Gln Gln Trp Gln Asp Lys		
	930	935
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	945	950
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Ser Gly Val Glu Met Ser Asp Met Leu Ala Ala Gln Asn Leu Val Gln		
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Ser Ile Pro Tyr Val Tyr Asn Asp Ala Leu Pro Glu Ile Pro Gly Met		
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Trp Asn Leu Tyr Asp Leu Arg Asn Ala Ile Pro Asn Gly Asp Phe		
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Arg Asn Gly Leu Ser Asp Trp Asn Ala Thr Ser Asp Val Asn Val		
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Gln Gln Leu Ser Asp Thr Ser Val Leu Val Ile Pro Asn Trp Asn		
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Val Ile	Ile Arg	Asp Gly	Ala	Asn Gln	Thr Glu	Thr	Leu Thr	Phe	
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Ser Tyr	Ile Thr	Lys Thr	Val	Glu Phe	Thr Pro	Ser	Thr Glu	Gln	
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